

THE BRITISH SOCIETY OF RHEOLOGY

BULLETIN



1984, VOL 27 No. 4

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Hon Editor
Dr H A BARNES
UNILEVER RESEARCH
PORT SUNLIGHT LABORATORY
BEBINGTON, WIRRAL
MERSEYSIDE

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OFFICERS AND MEMBERS OF COUNCIL



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EDITORIAL

Much of this edition is taken up with the official reports of the officers of the society given at the AGM. This event saw the last official duties of the outgoing President John Hutton. Those of us who saw John carrying out his duties at close quarters knew how committed he was to the society and to the science of rheology. We wish him every happiness in his retirement from Shell Research. We hear he will be busy in his retirement though, and as soon as space allows we will be publishing his "memoirs", actually the text of his "40 Years in Rheology" talk at Birmingham.

We welcome as our new President Professor Ian M Ward of Leeds University who is well known in the field of the deformation of polymers. He has promised to reintroduce the subject of solids into the society's future programme. The balance between deformation and flow must always be maintained if the society is to live up to the true meaning of its name.

I hope it's not a misuse of editorial privilege to call attention to a meeting advertised in this issue that I've been helping to organise. The joint meeting between the Society and the RSC Process Technology Group is especially aimed at those of our members (the majority of whom are employed in industry) who do not normally attend our meetings either because they find the papers too advanced or that they cannot afford a lot of time/money for such things. If you are one of that majority, this is the meeting for you! We hope to present an up-to-date picture of the field of rheology without committing you to a large outlay in terms of time and money. The meeting is only for one day, and if you are prepared to get up early enough you will probably be able to attend without staying overnight, making this an inexpensive way of getting informed as to the latest developments. We even have special rates for students and those not in employment. The Scientific Societies Lecture Theatre is a very convenient (and comfortable) venue and as an added bonus there will be an exhibition of laboratory and process viscometers. Overall it's something you can't afford to miss!

Lastly we extend our sympathy to our members at universities with respect to the further difficulties they are facing because of the current cash limitations of the SERC and the UGC. Let us hope that the situation will ease in the near future and that whatever happens the good work being done in universities in the field of rheology will not be lost.

Howard Barnes

British Society of Rheology

Minutes of the 44th Annual General Meeting

held on 12th September 1984

at University College of Wales, Aberystwyth

The Present, Mr J F Hutton, was Chairman
38 Society members were present

1. Minutes of the 43rd Annual General Meeting

The minutes of the 43rd Annual General Meeting, which had been published in the Bulletin, (Vol.26, No.4, 1983, pp.51-52), were approved.

2. Matters Arising from the Minutes

There were no matters arising.

3. Chairman's Remarks

The Chairman reported that, during his term of office as President, the Australian Society of Rheology had been founded. Arrangements between this Society and ourselves to distribute literature had been satisfactorily completed.

Following the death of Professor Oldroyd so soon after he had received the Society's Gold Medal award, the Chairman had been anxious to accelerate the presentation of other such awards and had been pleased that gold medals had been awarded to Professor Lodge and Professor Walters during the previous two years.

An important development had been the formalising of guidelines by Council for the appointment of Honorary Members. The Chairman concluded his remarks by expressing his opinion that molecular rheology was an important and growing area of work.

4. Report of the Treasurer

The Treasurer reported that the Society had a healthy cash surplus. He was seeking professional advice on the most appropriate way of investing this. The auditor's fees had been £98 pa, but would be increased to £140 pa in the future.

In discussion, the following points were made:

- (1) Dr Oliver requested further details of the profits generated by the conference held in Birmingham on General Rheology in April 1984.

- (2) The Treasurer suggested that this was due to an error by the auditors.
- (3) Concern was expressed about the large amount of uninvested money which was held in the Society's deposit account.

It was agreed

- i) that the accounts be accepted,
- ii) to retain the present firm of auditors,
- iii) that the Council would discuss as a matter of urgency the possible investment of the Society's cash surplus at its next meeting.

5. Report of the Membership Secretary

In the absence of the Membership Secretary, Dr Benbow outlined the main points of his report. Recruitment of new members had gone a long way to making up the decrease in members following the founding of the Australian Branch. Mr Schimanski was complemented on the large number of persons he had persuaded to join the Society. Dr Benbow commented that considerable effort had been involved by the Membership Secretary to put the details of all members in the Apple computer system and that the Society was now benefiting from this work. Members were asked to inform Mr Anderson if their individual records were incorrect. One outcome of the computerised records would be a new list of members which is to be issued in the near future.

6. Bulletins Editor Report

The Editor's report is printed in this Bulletin. It was well received by the Society members. No specific points were discussed.

7. Report of the Editor of Rheology Abstracts (included in the Bulletin)

Dr Oliver reported that the number of abstracts had decreased and he appealed for more abstractors. (One offer was made during the meeting).

In discussion there was enthusiastic support for the suggestion that abstractors should be treated to an annual dinner at the Society's expense. It was agreed that this would be held during the Society's Annual Autumn Conference.

8. Report of the Secretary

The full report is printed in the Bulletin.

The Secretary reported that it had been an eventful year, due to the founding of the Australian Society of Rheology; the large number of awards made and two highly successful conferences.

The Secretary expressed the Society's thanks to Dr Cheng and Dr Maitland for organising the Conference on Engineering Rheology and to Dr Oliver for organising the General Rheology Conference.

Conferences on a wide variety of subjects had already been planned for the future.

The Secretary suggested that the Society should sponsor a series of papers on topics of general interest.

In discussion, Professor Walters suggested that the sponsoring of such papers should be discussed at the next Council meeting.

9. Election of Officers and Council

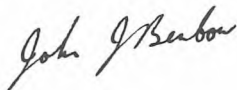
The Secretary had not received any additional nominations by 1st September and none had been proposed during the meeting. The full Council was thus elected as follows:

President	Professor I M Ward
Secretary	Dr J J Benbow
Treasurer	Mr T A Strivens
Membership Secretary	Mr P C Anderson
Editor (Abstracts)	Dr D R Oliver
Editor (Bulletin)	Dr H A Barnes
Ordinary Members	Mr S T E Aldhouse
	Dr F S Baker
	Dr D C-H Cheng
	Dr C J S Petrie
	Mr H Schimanski
	Dr A Evans

10. Any Other Business

Dr Barnes proposed a vote of thanks on behalf of the Society to Mr Hutton for his invaluable service as President of the Society.

The meeting closed at 6.15 pm.



J J Benbow
Honorary Secretary



From: *The Honorary Secretary*
Dr. J. J. Benbow
Department of Chemical Engineering
University of Birmingham
PO Box 363
Birmingham B15 2TT
021-472 1301 ext. 3548

SECRETARY'S REPORT 1983-84

The past year has been an eventful one.

The Australian Rheological Society has been formed and judging by their first two bulletins, is flourishing. Mutually satisfactory arrangements have been agreed for copies of our Rheology Abstracts to be distributed in Australia.

One feature of this year has been the number of awards made to rheologists at home and overseas. Several honorary memberships have been granted, including one to Professor Leonov. New guidelines which have been formulated by Council require that when honorary memberships are awarded, a publication in the Bulletin should include a summary of the reasons for making the award.

Two annual awards have been made this year. In April, Professor D Boger received the 1983 award and the mounted certificate. Details of the presentation and accompanying citations have been published in the Bulletin. Dr K M Beazley was our selection for the 1984 annual award. This popular award will be made later this evening.

The high standards we set for our gold medal awards leads to them being given only rarely. In the past year however, two recipients have been chosen. The Society's gold medal was presented to Professor A S Lodge last September at Imperial College, London and one will be presented to Professor K Walters in a few hours time. I am sure this award gives special pleasure to those of us who have been taught by, or worked with him.

The Editors of the Bulletin and Rheology Abstracts have already described their progress during the past year, but I would like to add my own plea for more contributions from Society members.

Rheology Abstracts, in particular, contributes much to our finances and to our individual rheological work.

This year has been further distinguished by two very well organised and successful conferences. In September 1983 a conference on Engineering Rheology was held at Imperial College of Science and Technology, London. This was organised jointly with the Deutsche Rheologische Gesellschaft and the EFCE Working Party on non-Newtonian Processing. The large number of papers was

matched by a comparatively high number of participants including many from overseas. On a rather smaller scale, the conference on "General Rheology" at Birmingham in April was characterised by its friendly atmosphere, the wide range of subjects and lively discussions.

Some details of future meetings have been publicised in the Bulletin. In October the International Congress will be held in Acapulco. We will be represented by a small party. At home, we plan to hold conferences on Industrial Rheology, Experimental Methods, Food Rheology and the Deformation of Solid Polymers.

To ensure that your council is meeting the needs of members, we would welcome your suggestions for future activities. Our main efforts have been involved in publishing the Bulletin and Rheology Abstracts, holding conferences and making awards.

I would like to suggest that we sponsor a series of general papers by Society members (assuming authors could be found). For example, a brief summary of currently available rheometers which would benefit newcomers to rheology and established workers. Suitable payment could be given to the authors and appropriate charges made to non-members. The papers could be published in the Bulletin.

To summarise, I feel that this has been a notable year in many respects and one which lives up well to the aims of the Society.

John J. Bonbow

Editorial Note: The Treasurer's Report and the Annual Accounts will be published in the next issue of the Bulletin

RHEOLOGY ABSTRACTS EDITORS' REPORT

ANNUAL GENERAL MEETING, 12 SEPT. 1984

The year has seen the formation of the Australian Society of Rheology, which formerly was a branch of our own Society. This involved negotiations with Pergamon Press to secure the continued supply of Rheology Abstracts to our Australian friends. Pergamon kindly agreed to continue sending the Abstracts to Australia upon payment by A.S.R. of the postage costs. The Australians are now supplying their own mailing labels, after a transition period during which we continued on the 1983 basis. No problems have so far been encountered during the changeover, and we wish the new Society the best of good luck in the future.

The Abstracts continues to provide an important source of income for the Society (see Treasurer's report), as a percentage of Pergamon's profits on its distribution. However, the Abstracts now are smaller than they were in the early seventies, partly due to the reduced printing size and partly due to a reduced number of abstracts. This has helped to maintain the profits, but from the point of view of good coverage of the literature is less than satisfactory.

The Editor has now drawn up three lists of journals in approximate order of rheological importance and is now looking for volunteers to fill gaps and to add new journals to our cover. One problem in the past was that some reviewers abstracted over twenty journals; these are irreplaceable and it is felt that three or four journals should be a normal maximum. Your help would be greatly appreciated! It has also been suggested that an "abstracter's dinner" should be held each year, possibly linked in with the annual conference to provide some reward for the hard work which the abstracters do for the Society. This will be discussed by the Council at its next meeting.

British Society of Rheology
Bulletin Editor's Report 1984

This year's Bulletin has had added "colour" from the regular inclusion of adverts for rheological equipment. The printing of these few extra pages has also reduced the cost to members considerably. The cost per page of £100 offers the advertiser a well directed medium, putting their claims immediately before potential users at a reasonable cost.

The number of Bulletins printed is now slightly reduced due to the departure of Australian members, however the welcome recent increase in membership has partially offset this reduction.

Members are encouraged to continue using the Bulletin to communicate their views. We don't have many letters these days - doesn't anyone want to say anything? Use your Bulletin!

We thank all our contributors for providing reviews, conference reports etc; hoping they will continue to do so in the future.

HOWARD BARNES
Honorary Editor

MEMBERSHIP SECRETARY'S REPORT

Annual General Meeting, 12 September 1984.

The membership of the Society at the end of July 1984 stood at 602. The figure reported last year was 664. The Table shows a breakdown of the figures.

	1983/84			1982/83
	UK	Overseas	Total	Total
Membership July '83	393	189	-	664(*)
Membership July '84	393	209	602	-
New members	51	22	73	41
Resignations	13	4	17	31
Australian Soc.	-1	+2	+1	-
Membership ceased by rule 4(d)	14	11	25	7
Deaths	1	1	2	2
Moved abroad	-9	+9	0	0
Net gain in Members	13	17	30	1

The figures are not reconciled with the previously reported totals due to errors found in the mailing list when the records were transferred to the new computerised system. (*) Includes 82 members last year who lived in Australia. Not all transferred to the new Australian Society inaugurated during the past year. Included in the membership figures are 52 whose subscriptions are in arrears by £5 or more and 8 in arrears of less than £5. In large measure the increase in new membership figures compared to last year is due to the efforts of Harry Schimanski. He was elected to the Council last year and during the year recruited 26 new members.

During the year Dr M.M Cross, Mr T.C Davenport, Dr W.M Jones and Prof A Leonov were elected to Honorary Membership. The Society currently has 38 Honorary Members.

During the past year the membership records of the Society have all been transferred to an Apple microcomputer based database system. This has successfully been used to keep track of the details of members' subscription records and to generate the mailing labels for the Societies publications. All members were circulated in June with a copy of their own record sheet with a request to confirm that the details, particularly of address and current rheological interests, were correct. Approximately 25% of members returned amended sheets. If you have not yet returned your record sheet, then please still do so. It is planned that these computerised records will shortly be used to produce an up-to-date Membership list of the Society.

P.C.ANDERSON

MEMBERSHIP SUBSCRIPTION REMINDER

The annual membership subscription of £5 falls due on the 1st of October for the year 1984/85. May I please remind all members who have not paid in advance or who do not pay by Banker's Standing Order to send their payment now to

The Hon. Membership Sec.
Mr P.C.Anderson
32 Queensway
Feltham
MIDDLESEX
TW13 7NS

If you do not pay your subscriptions by Banker's Standing Order, I would urge you to do so for the convenience of the both of us. It would reduce the onerous task I have each year of sending out subscription reminders. The order should be made payable to the British Society of Rheology Membership Dues Account number 0180985 at Lloyds Bank, 20 North Street, Leatherhead, Surrey. (Branch Code number 30-94-94). In addition please also notify me at the above address that you have so instructed your bank.

Overseas Members: Please note that you may pay for several years' membership in advance, but please ensure that the amount remitted, if not already in Sterling, should include an extra £1.60 to defray our Bank charges. It is also perfectly acceptable for any number of members to send a single cheque covering their combined subscriptions, to save exchange expenses.

GOLD MEDAL AWARD 1984 - PROFESSOR K. WALTERS

I feel sure that I can claim without fear of contradiction that PROFESSOR KEN WALTERS is the leading rheologist in the U.K. at the present time. I am also confident that he can be numbered among the top dozen rheologists in the world. As such he is the outstanding candidate for the Gold Medal Award of the British Society of Rheology.

KEN WALTERS is a native of Swansea in which city he spent some years as schoolboy, undergraduate and postgraduate student. At the University College of Swansea he gained a first-class degree in Applied Mathematics and became one of the first research students of Professor J.G. Oldroyd, thereby receiving the best introduction to rheology that could have been had in 1957. His Ph.D. illustrates the profound influence that J.G. Oldroyd had on him. Indeed KEN WALTERS' total work has displayed the growth and blossoming of ideas and concepts introduced by J.G. Oldroyd, for whom Ken had the greatest admiration and respect.

After Swansea KEN WALTERS moved round the coast of the land of his fathers to the University College of Wales, Aberystwyth where, in the Department of Applied Mathematics he progressed steadily through the ranks and became Professor in 1973.

Under Ken's influence Aberystwyth has become, like Madison, a centre of rheological excellence, where rheology is studied analytically, numerically and experimentally. At any one time the rheology group, which includes members of staff and research students, has averaged about 12 but it has had an external influence much greater than this number implies.

The main thrust of the Aberystwyth school has been to describe the flow of non-Newtonian fluids in relatively simple geometries and thereby to derive properly-invariant values of stress, strain rate and material functions. The work has done much to raise the status of rheological measurement and KEN WALTERS' book "Rheometry" (1975) which is based on this work, has become one of the classical volumes in the field.

During the past decade another main-stream activity has been the use of numerical methods to study complex flows, that is, flows in the complicated geometries that are more characteristic of an industrial process than of a laboratory instrument. This interest in industrial problems is not a new-found one prompted by recent government pressures, but has existed since the beginning. For more than twenty years the Aberystwyth research has been closely linked with such industries as lubricants, detergents, polymers, fibres and paints, as well as with instrument manufacturing. It is of interest to note that the progress made in the numerical activity has led to another book, written in collaboration with M.J. Crochet and A.R. Davies, "Numerical Simulation of Non-Newtonian Flow" (1984).

KEN WALTERS has also been successful in inspiring many of his students to continue in rheology, so that we now find at least half-a-dozen rheology groups operating in the U.K. and abroad in academia and in industry and all can trace their lineage directly back to Aberystwyth.

In addition to all the above mentioned research activity PROFESSOR WALTERS has taken on other responsibilities. He founded, and has been the only editor of, the Journal of non-Newtonian Fluid Mechanics. This journal can only be described as a great success: the founding editor set very high standards and, in maintaining these standards, has been ruthless in rejecting contributions that seemed to be less than perfect.

Finally, KEN WALTERS has served on the Council of the British Society of Rheology and was President from 1974-76.

The case for the award of the Society's Gold Medal to PROFESSOR KEN WALTERS is so strong that we must ask him to accept it with our apologies for being so dilatory.



The President Mr J F Hutton presents the awards to
Prof K Walters (above) and Dr K M Beazley (below)



BRITISH SOCIETY OF RHEOLOGY

ANNUAL AWARD 1984 - DR. K.M. BEAZLEY

Following his schooldays at Newport in the Isle of Wight, KEN BEAZLEY studied physics at the University College, Hull and sat the external degree examinations of London University.

He eventually took up employment with English Clays, Lovering Pochin & Co. Ltd, by whom he is still employed, and whilst in their employment successfully defended a thesis, submitted in 1966 for the London external Ph.D. It was on "The rheological history of a concentrated deflocculated china clay suspension". The period 1959-72 was spent carrying out extensive studies of clay suspensions and paper coating mixes. During this time DR. BEAZLEY made contributions to the effects of suspension rheology on the blade coating process. In the following five years he was more involved with the properties of paper than of suspensions and the influence of fillers on paper strength. In recent years his duties have involved dealing with customer problems and rheology has taken a back seat.

KEN BEAZLEY served on the Council of the British Society of Rheology from 1967 to 1977 and was Honorary Secretary from 1970 to 1974. During his period as Secretary, the Society flourished and benefited from his administrative skills. The membership was close to 600 - not much lower than now - and attendance at conferences was generally more than 100. Shrivenham was a popular venue of conferences at that time. With the entry of Britain to the European Economic Community, which also occurred in that period, the Society introduced joint meetings with other European Societies of Rheology, and paved the way for other co-operative ventures.

It is for his effective dedication to the well-being of the Society and his contribution to industrial applications of rheology that DR. K.M. BEAZLEY has been chosen for the Annual Award for 1984.

"Rheology of Lubrication and other Industrial Processes"

University College of Wales, Aberystwyth

11th-13th September 1984

With the jewel of Acapulco looming, the Society and its President did some soul-searching and produced its own little gem in Aberystwyth. The idea was to combine the research presentations of the College's Industrial Fellows with those of other speakers and to organise a two-day meeting, into which would be blended a Council meeting and an Annual General Meeting. Other important business included the presentation of the Society's Gold Medal to the Celtic Maestro of Rheology, Professor Ken Walters, and the Annual Award to the deserving Ken Beazley. After dinner speeches can rarely be commended, but both recipients spoke warmly and briefly from the heart and were clearly delighted to be honoured by the Society.

The first five papers of the meeting dealt with molecular mechanisms of shear flow and lubricant viscosity. This seemed to produce some imbalance in the subject matter, especially since a paper by Chan Man Fong on load and friction in bearings was unfortunately not presented. Professor Tabor addressed the problem of the remarkable increase of viscosity with pressure in oils, starting from the stress-aided thermally activated approach (after Eyring), a model which mimics nature well but involves the jumping of molecules from one position to another! Fortunately, in the modified theory a more reasonable snake-like motion is assumed. Other papers dealt with molecular-dynamics computer simulation, in-situ spectroscopy and solid friction. In the latter paper, the redoubtable Brian Briscoe used the concept of "interfacial rheology", the model consisting of a thin interfacial film formed at the areas on contact, where work is performed in much the same way as in bulk rheology.

In separate papers, John Hutton and Ralph Oliver posed the question "do polymeric additives improve lubrication performance?". Both experiments involved the measurement of friction and load, the former in a journal bearing geometry with highly viscoelastic lubricants and the latter in external cylinder/cylinder sliding with orthodox polymer-thickened oils. In each case there was definite evidence of load enhancement due to the presence of the polymeric additive and, in most ranges of operation, there was reduced friction. It is felt that this is a rewarding field of study, especially in view of the potential fuel saving aspect in motor cars.

John Benbow gave an interesting lecture on paste rheology, which covered the important point of why pastes, yielding in bulk and thus changing shape, have a greater yield stress than when shearing at a surface. Neil Cogswell, on the other hand, extolled the virtues of fibre reinforced thermoplastics. Great progress has been made in the manufacture of strong lightweight structures from these materials and the problem of two-dimensional curvature seems to have been overcome. However, one questioner had the temerity to point out their low values of "elongation at break" and then proceeded to damage a sample with a sharp blow on the metal corner of his seat! Professor Pearson's lengthy discourse seemed to have one important message - the remarkably small impact on industrial processes of the theoretical and experimental work performed in university laboratories, often performed with the aid of generous SERC support.

Professor Walter's Gold Medal address was the highlight of the meeting. One never ceases to be amazed at the wide range of experimental topics which it is possible for a mathematician to cover. The concept of testing the same viscoelastic solutions in different Universities all over the world is a good one; the shear stress and the first and second normal stress differences were compared. Clearly, the second normal stress difference was the least reproducible and the shear stress the most reliable, but the impact would have been greater if all the available evidence had been presented - a full blend of wheat and chaff! Later, some beautiful flow patterns in partially-divided channels were shown, in some of which a viscoelastic liquid appeared to be able to impose its own unusual flow pattern on a Newtonian fluid with which it had a common interface!

The overall impression was of a happy meeting - for Aberystwyth in the sunshine can vie with any campus. Our retiring President, John Hutton, did an excellent job in organising the meeting and certainly provided the best "value for money" which was humanly possible. More prestigious organisations - please note! This is also a suitable time to thank John for the work he has done for the Society during the last two years and to wish the new President, Ian Ward, good fortune during his term of office.

D.R. Oliver

MEMBERSHIP NEWS

The following applications for Membership were approved at the Council Meeting on September 11th 1984.

Dr Max BLOCK	M.Sc, PhD, DIC, DMS, C.Chem, FRSC, AMBIM
3 Hornby Park	
Liverpool L18 3HH	peta FGL

Mr William Allan CRAIG	BSc Hons (Chem)
Du Pont (UK) Ltd	
Wedgewood Way	feta ADGI
Stevenage	

Dr M.T. LOPEZ-VIDRIERO	MD, PhD
Dept of Thoracic Medicine	
Royal Free Hospital	pesa M
Pond St., London, NW3 2QG	

Mr Iain MELVILLE	B.Sc
Visco Lab, Dept of Electrical Eng.	
Glasgow University	fetsa DFGJ

Mr Matthew C. MUIR	B.S.ch.E
Polymer Science & Eng. Dept.	
University of Amherst	fesa BCDM
Massachusetts 01003, USA	

RESIGNATION

Dr.-Ing Wolfgang vom BERG, Aachen, Germany. Joined in 1978.

MEMBERSHIPS CEASED UNDER RULE 4D.

Dr L.A. Adortan, University of Birmingham. Joined in 1967.
Mr C. Anderson, Cyanamid Fothergill, Wales. Joined in 1980.
Dr S.I. Bakhtiyarov, Baku, USSR. Joined in 1981.
Dr R.K. Bhatnagar, Univ. of Campinas, Brazil. Joined in 1971.
Mr K.D. Bogie, Atomic Energy Board, South Africa. Joined in 1966.
Mr P.J. Coomber, Instrom, Ltd, High Wycombe. Joined in 1978.
Mr M.J. Davies, Fosco Intl., Birmingham. Joined in 1981.
Dr A.J. de Vries, Was at Rhone Poulenc, France. Joined in 1960.
Dr F.N. Emengo, Enugu, Nigeria. Joined in 1980.
Mr G.J. George, Senghenydd, Wales. Joined in 1981.
Prof K. Ito, Tokyo, Japan. Joined in 1979.
Mr G.A. Lewis, Address unknown. Joined in 1970.
Mr B. Lockwood, Address unknown. Joined in 1980.
Dr M.Z.A. Nasir, Returned to Malaysia. Joined in 1981.
Prof E.K. Obiaker, Ondo, Nigeria. Joined in 1970.
Dr S.T.J. Peng, JPL, California, USA. Joined in 1977.



Mr Peter Walker, Secretary of State for Energy, unveils a plaque to commemorate the opening of Polymer Laboratories new Instrument Manufacturing Division at Epinal Way, Loughborough. With him is the Company's chairman Dr Ray Wetton.

Ray Wetton is a well known member of the Society and was until recently a senior lecturer in Polymer Science at Loughborough University. We wish him well in his new job.

ROYAL SOCIETY OF CHEMISTRY
INDUSTRIAL DIVISION
Process Technology Group

and

THE BRITISH
SOCIETY OF
RHEOLOGY

announce a joint

ONE DAY SYMPOSIUM
entitled

"RHEOLOGY IN THE PROCESS INDUSTRIES"

to be held at
The Scientific Societies Lecture Theatre
New Burlington Place, LONDON W1

on Wednesday 8th May 1985

Registration and coffee 9.30am : lectures begin at 10.00am

Six leading figures in the field of rheology will review the latest ideas in this important and practical branch of science. The symposium is aimed at the industrial chemist, process technologist and chemical engineer and those academics who are interested in process technology.

The symposium is a follow-up to the successful 1981 meeting when Dr H A Barnes presented the results of his Survey on Dispersion Rheology following his Industrial Fellowship. At the symposium a report will be given on progress in setting up a similar Industrial Fellowship on Emulsions sponsored by various Companies in association with the Process Technology Group.

*** Subjects and Speakers ***

Colloidal Suspensions	-	Dr J Goodwin	(Bristol University)
Polymer Melts	-	Mr N Cogswell	(ICI Plastics, Wilton)
Rheometry	-	Dr H A Barnes	(Unilever Research)
Flow Modelling	-	Dr P Townsend	(Swansea University)
Engineering Applications-		Prof M Edwards	(Bradford University)
Flow of Xanthan Gum	-	Prof A Nienow	(Birmingham University)
in a Bioreactor			

There will also be

** AN EXHIBITION OF LABORATORY AND PROCESS VISCOMETERS **

Cost (including morning coffee, lunch and tea & biscuits):

Members of either Society : £25

Nonmembers : £35

Those not in gainful employment : £15

Application for registration, with payment enclosed and made out to "RSC Process Technology Group Trust" should be addressed to:

Mr H L Bennister
174, Beverley Drive,
EDGWARE,
Middlesex, HA8 5ND
Telephone: 01-952-4154

REGISTRATION FORM FOR RSC/BSR SYMPOSIUM
MAY 8TH 1985 ,AT SCIENTIFIC SOCIETIES' LECTURE THEATRE,LONDON

Please reserve a place for me at the above symposium.

I am a member of the RSC and enclose £25 Please)
I am a member of the BSR and enclose £25 tick)
I am not a member of either and enclose £35 relevant)
I am not in gainful employment and enclose £15 item)
(This latter category is intended to cater for
those who are wholly retired;unemployed or
bona fide students.)

N.B. Cheques etc. should be made payable to :

"RSC Process Technology Group Trust"

The payments indicated above cover:

- * registration fee * -
- * morning coffee * -
- * lunch * -
- * tea and biscuits * -

Name and Title.....

Organisation.....

Address.....

:.....

:.....

Telephone Number.....

Signed.....Date.....

This registration form , with remittance enclosed, should be
sent to :

Mr H L Bennister
174,Beverley Drive,
EDGWARE,
Middlesex,HA8 5ND
Telephone: 01-952-4154

Registration will be confirmed on receipt of the appropriate fee.
Unfortunately because neither of the organising bodies is VAT
registered,we are not able to issue VAT invoices.

Please photocopy this form for further registrations.



DRAG REDUCTION 84

An International Conference on the Fundamentals and Applications of Polymer Drag Reduction in Liquid Flows

BRISTOL, ENGLAND
International Association
for Hydraulic Research



2-4 July 1984
University
of Bristol

More than 80 participants from 17 nations, split roughly equally between academic institutions and government/industry, attended the 3rd International Drag Reduction Conference, on the Fundamentals and Applications of Polymer Drag Reduction in Liquid Flows, sponsored by IAHR and the University of Bristol, in Bristol UK, from 2-5 July 1984.

In recent years, the problem of the drag reduction mechanism has received continued attention, albeit at a lower level of activity than was the case during the mid-seventies. However, the search to establish industrial recognition for the use of drag reducing additives in regular applications has made considerable progress over the last few years. These two themes were reflected in the content of the meeting.

Forty papers, from 13 countries were presented in sessions on Rheology, Turbulence, Scale-up, Degradation, and Applications, both water-based and oil-based, in a variety of industries, including hydrotransport, marine, sewers, heat transfer and oil pipelines. The meeting was a technical success, and the delegates, together with 24 guests, enjoyed a pleasant social programme in delightful summer sunshine, belieing the reputation of rainy Britain.

The next meeting devoted to this topic is provisionally scheduled to be in Switzerland, in August 1987, and will be sponsored jointly by IAHR/IUTAM.

The Conference Proceedings, at a cost of £30 (£23 to British Society of Rheology members) are available from:

Dr. R.T. Moses,
Organising Secretary DR84,
Faculty of Engineering,
Queens Building,
University of Bristol,
Bristol BS8 1TR, U.K.

CONFERENCE NOTICE

TRIBOLOGY IN POWDER CONVEYING AND PROCESSING

The Tribology Group of the Institute of Physics is organising a conference on the above topic in July next year at Imperial College. It is expected to be a two-day meeting and the provisional date is 3/4 July 1985.

Tribologists are concerned with the friction, lubrication, wear, adhesion and triboelectrical properties of solids in contact. The way in which these phenomena are manifested between neighbouring particles or between particles and the walls of containers or processing equipment governs to a large extent, for example, the flow, mixing and compaction of powders or the strength of agglomerates. An important aim of this conference is to bring together powder technologists and tribologists so that they may explore common ground.

The group would like to cover about four topics:

- (1) Friction and adhesion in powder flow.
- (2) Lubrication in powder compaction.
- (3) Particle and counterface attrition in conveying.
- (4) Contact electrical phenomena in powder flow.

If you would like to contribute to this meeting or can suggest additional topics for discussion we would be very pleased to hear from you. Those wishing to attend the meeting may also contact us at this stage and further notification will be sent in due course.

Dr B J Briscoe
Imperial College
Dept. of Chemical Engineering
Prince Consort Road
LONDON
SW7 2BY

Dr M J Adams
Unilever Research
Port Sunlight Laboratory
Quarry Road East
BEBINGTON
Merseyside
L63 3JW

Telephone: 01-589-5111

Telephone: 051-645-2000

Ext: 1929

Ext: 8349

The 7th Ross Priory Meeting

on

28th - 30th May 1985

The 7th Ross Priory Meeting will be held at the University of Strathclyde's study and recreation centre on Loch Lomond, Scotland. The course will include lectures, both theoretical and experimental, methods of use in industrial and research laboratories. The techniques described include industrially applicable measurements, rheogoniometry, elongational flow and dynamic mechanical analysis. The interpretation of rheological data will be considered.

The lecturers on the course are: Professor K Walters, UCW Aberystwyth
Dr H Barnes, Unilever Research
Dr J Ferguson, University of Strathclyde

For active participants the fee, including full board and transport to and from Glasgow, is £140.00. For accompanying persons there will be a considerable reduction, available on request.

For further details, please detach the accompanying slip and return it to:

Dr J Ferguson, Department of Pure and Applied Chemistry, University of Strathclyde, Cathedral Street, Glasgow G1 1XL, Scotland, U.K.

.....
The 7th Ross Priory Meeting

28th - 30th May 1985

Please send me more details*/enrol me* for the above course.

NAME:

ADDRESS:

.....

.....

.....

TEL. NO:

* Delete whichever is inapplicable

2 ✓

OTHER MEETINGS

5-7 March Birmingham: POWTECH '85

Contact: Miss Fiona Dendy
Inst. of Chemical Engineers
165-171 Rialway Tce.,
RUGBY CV21 3HQ

1-4 April Cambridge: 6th Churchill Conference on
Deformation, Yield and Fracture
of High Polymers (DFI, BSR)

Contact: Plastics and Rubber Institute
11 Hobart Place, LONDON SW1 OHL

1-4 April Reading: Numerical Methods for Fluid Dynamics
(Inst. for Computational Fluid Dynamics
and the Inst. for Mathematics and its
Applications)

Contact: Anne-Marie Crawley
ICFD Secretary
Dept. of Mathematics
University of Reading
Whiteknights
READING RG6 2AX

13-15 May Berlin (West): Annual Meeting of German Society

Contact: Prof Dr K Kirschke
German Society of Rheology
Unter den Eichen 87
D-1000 BERLIN 45
West Germany

10-12 October Reading: New Techniques in Experimental Rheology
(BSR Autumn Conference)

Contact: Mr H Schimanski, Contraves Industrial Products
Times House, Station Approach,
RUISLIP, Middx. HA4 8LH

1986

17-20 June Prague: Second Conference of European Rheologists

Contact: Institute of Hydrodynamics
Czechoslovak Academy of Sciences
Podbabska 13, 166 PRAGUE

AUSTRALIAN NATIONAL CONFERENCE

A recent issue of the Australian Society's Newsletter stated that a few copies are still available of the volumes of reprints of the 1st and 3rd Australian National Rheology Conferences held at Monash University and R.M.I.T.

1st National Rheology Conference, 1979
27 papers, pp. 133 + v

3rd National Rheology Conference, 1983
24 Papers, pp. 123 + viii

For details of price etc. contact:

P H T Uhlherr
Dept of Chemical Eng.,
Monash University
Clayton, 3168
Australia

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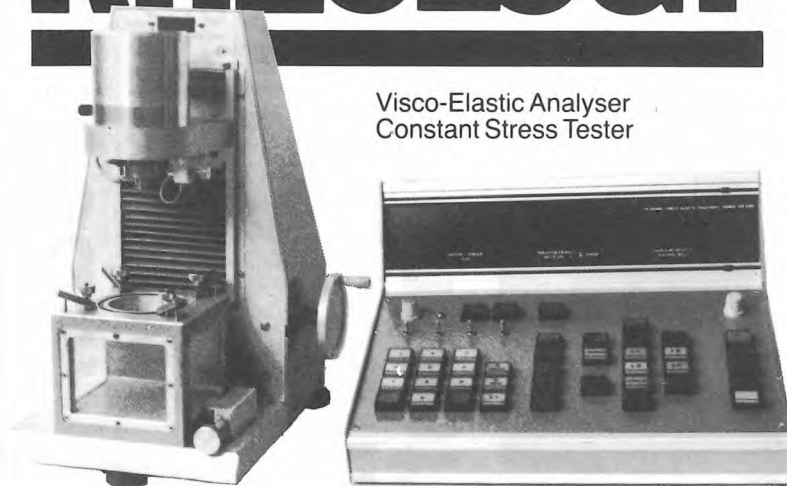
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